STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
BATON ROUGE, LOUISIANA

COOPERATIVE AGREEMENT INFORMATION SHEET
FOR
FURNISHING L.E.D. SIGNALS

Contractor: **TEMPLE, INC.**
P. O. BOX 2066
DECATUR, AL 35602-2066
(800) 633-3221

Date Bid Opened: MARCH 11, 2004
Date Awarded: MARCH 24, 2004
Purchase Order 153645
Contract Award No.: MARCH 24, 2004 –
Contract Period: MARCH 23, 2007

Vendor Number Is: 630573758

Cooperative Agreement Contract
YES: XXXXX NO:

Delivery Points: FOR DOTD:
TRAFFIC OPERATIONS
7686 TOM DRIVE
BATON ROUGE, LA 70806

FOR OTHER PUBLIC ENTITIES:
STATEWIDE

Terms: NET 30

Delivery: 45 DAYS ARO

F.O.B. DESTINATION

DOTD STOCK NUMBER	**DESCRIPTION**	**BRAND**	**UNIT PRICE**
	SIGNALS, L.E.D., 12 IN., TCS NO. 42, REVISED 3/4/2004		
14-03-4000	RED MODULES	GELCORE DR6-RTFB-20A-40PL	65.00
14-03-4005	YELLOW MODULES	GELCORE DR6-YTFB-20A-40PL	76.00
14-03-4010	GREEN MODULES	GELCORE DR6-GCFB-20A-40PL	108.00

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DOTD STOCK NUMBER	DESCRIPTION	BRAND	UNIT PRICE
14-03-4020	YELLOW ARROW MODULES	GELCORE DR6-YTAAN-21A	48.00
14-03-4025	GREEN ARROW MODULES	GELCORE DR6-GCAAN-21A	59.00

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245

KATHLEEN BABINEAUX BLANCO
GOVERNOR

(225) 379-1444 Fax: (225) 379-1862

JOHNNY B. BRADBERRY
SECRETARY

June 30, 2006

Temple, Inc.
Attention: Gina Posey
P.O. Box 2066
Decatur, AL 35602-2066

SUBJECT: Contract No. 202882
For Furnishing LED Signal Modules

Gentlemen:

The Department of Transportation and Development is now establishing contracts with a cooperative agreement clause which, if the vendor is agreeable, allows other state agencies and public entities to "piggy back" off our contracts. We have also received a legal opinion that a cooperative agreement clause can be added to current contracts since it does not change any of the terms and conditions of the current contract.

Please review the attached addendum and signify your decision to accept or to reject the attached cooperative agreement clause by signing below and returning this letter to the Department of Transportation and Development by July 10, 2006. Your decision to accept or reject this addendum will have no effect on your contract with the Department. Awards will continue to be made to the lowest bidder meeting specifications and a decision to reject the cooperative agreement clause will have no bearing on the contract award.

If you have any questions concerning the above or wish to discuss further, please contact Pam Parker at (225) 379-1441.

Very truly yours,

Dana D. Watlington

Dana D. Watlington
DOTD PROCUREMENT DIRECTOR

I hereby accept the option to add the cooperative agreement clause to the contract referenced above.

Temple, Inc.
BY: _____

* See note on following page.

I hereby reject the option to add the cooperative agreement clause to the contract referenced above

Temple, Inc.
BY: _____

COOPERATIVE PURCHASE AGREEMENT

State Agencies, Political Subdivisions of the State and Quasi State Agencies may be permitted to purchase from contracts made by the Department of Transportation and Development's Procurement Section.

The Bidder may, at his option, amend this bid so that any contract awarded will apply to other State agencies, Political Subdivisions or Quasi Agencies.

Bidder hereby amends his bid so that any contract awarded will apply to other State Agencies, Quasi State Agencies or other Political Subdivisions of the State.

Yes ✓ No_____

Failure to mark "no" on the above will constitute acceptance of this cooperative purchase agreement to other State Agencies, Political Subdivisions of the State and Quasi State Agencies.

ORDERS: Other State Agencies are to issue contract release orders/purchase orders for the items required, as and when needed.

Political subdivisions of the State and Quasi Agencies who have been authorized by the Office of State Purchasing to purchase from contracts made by the Department of Transportation and Development are to issue their regular purchase orders directly to the Contractor, making reference to the Contract Number, Item Number (if applicable) and Contract Expiration Date.

CONTRACT ADMINISTRATION: The Department of Transportation and Development will not monitor, administer or resolve any discrepancies, controversies, invoicing or payments related to this contract on orders placed by other State Agencies, Political Subdivisions or Quasi Agencies.

Controversies between the Department of Transportation and Development and a Contractor will be resolved by the DOTD Procurement Director.

Controversies between other State Agencies and a Contractor will be resolved by the Director of State Purchasing in accordance with R.S. 39:1673.

It will be the responsibility of the ordering entity to correspond directly with the Contractor.

DELIVERY: Vendors accepting the Cooperative Purchase Agreement understand and agree that deliveries to other State Agencies, Political Subdivisions or Quasi Agencies will be on a statewide basis.

* Delivery to agencies other than Baton Rouge will be charged freight on orders totaling less than $5,000.00.

Louisiana

Department of Transportation And Development

Traffic Control Standard

Number 42

March 4, 2004

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SPECIAL SPECIFICATIONS
12 IN LED TRAFFIC SIGNAL LAMP UNIT
Mast Arm and Span Wire Mount

1.0 SCOPE

1.1 This specification describes the minimum acceptable design and performance requirements for a 12 in LED (light emitting diode) traffic signal lamp unit.

2.0 12 IN LED TRAFFIC SIGNAL LAMP UNIT

2.1 General

2.1.1 The LED traffic signal lamp unit shall be designed as a retrofit replacement for existing incandescent signal lamps, which will not require any special tools for installation. The 12 in retrofit replacement LED traffic signal lamp unit shall fit into existing traffic signal housings without modifications.

2.1.2 Installation of a retrofit replacement LED traffic signal lamp unit into an existing signal housing shall only require removal of the existing lens, incandescent lamp, fitting of the new unit securely in the housing door, and connecting to existing electrical wiring or terminal block by means of simple connectors. The LED retrofit shall not require the removal of the reflector.

2.1.3 If proper orientation of the LED unit is required for optimum performance, prominent and permanent directional marking(s), that is an "UP arrow", for correct indexing and orientation shall exist on the unit.

2.1.4 The manufacturer's name, individual serial number, manufactured date, model number, and batch number shall be permanently marked on the backside of the LED traffic signal lamp unit. A label shall be placed on the unit certifying compliance to ITE standards.

2.2 Physical and Mechanical Requirements

2.2.1 The LED traffic signal lamp unit shall be a single, self-contained device, not requiring on-site assembly for installation into an existing traffic signal housing.

2.2.2 The assembly and manufacturing process for the LED traffic signal lamp unit assembly shall be such as to assure all internal LED and electronic components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

2.2.3 Each LED traffic signal lamp unit shall comprise a UV stabilized polymeric outer shell, multiple LED light source, and a regulated power supply. LED are to be mounted on a polycarbonate positioning plate or conformally coated PC board.

2.2.4 The external lens shall be smooth on the outside to prevent excessive dirt/dust buildup. The optical lens/appearance of the lamp shall reflect a light distribution look similar to that of an incandescent lamp.

2.3 Optical and Light Output Requirements

2.3.1 The LEDs shall be manufactured using AlInGaP (Aluminum-Indium-Gallium-Phosphide) technology or other LEDs with lower susceptibility to temperature degradation than AlGaS (Aluminum-Gallium-Arsenic). AlGaS LEDs will not be allowed.

2.3.2 The color of the LED signal lamp shall be specified in the Invitation for Bids.

2.3.3 Each LED traffic signal lamp shall meet minimum laboratory light intensity values, color (chromaticity), and light output distribution as described in I.T.E. VTCSH (Vehicle Traffic Control Signal Head Standard) part 2 of the specifications 6.4.2.1, 6.4.4.1, 6.4.4.2, 6.4.4.3, 6.4.5 and 6.4.6 as a minimum. The table below replaces the values in Table 1 of Section 4.1.1 of the I.T.E. VTCSH. The LED signal modules are required to meet initial luminous values that are 115% of the required minimum values in the table below. The 6.4.2.1 test shall include an expanded view with the following minimums:

Minimum Luminous Intensity Values (In Candelas)

GRID SPECIFICATION FOR 12 IN RED (Stock# 14-03-4000)

Shaded area is ITE requirements for light intensity

	27.5	22.5	17.5	12.5	7.5	2.5	-2.5	-7.5	-12.5	-17.5	-22.5	-27.5
22.5U												
17.5U			3			10	10			3		
12.5U			14			20	20			14		
7.5U			20			54	54			20		
2.5U			58			220	220			58		
2.5D			77	141	251	339	339	251	141	77		
7.5D	16	38	89	145	202	226	226	202	145	89	38	16
12.5D	16	22	34	44	48	50	50	48	44	34	22	16
17.5D	16	20	22	22	22	22	22	22	22	22	20	16
22.5D			7			10	10			7		
27.5D												

GRID SPECIFICATION FOR 12 IN GREEN (Stock# 14-03-4010) AND YELLOW (Stock# 14-03-4005)

Shaded area is ITE requirements for light intensity

	27.5	22.5	17.5	12.5	7.5	2.5	-2.5	-7.5	-12.5	-17.5	-22.5	-27.5
22.5U												
17.5U			7			20	20			7		
12.5U			27			41	41			27		
7.5U			41			108	108			41		
2.5U			115			441	441			115		
2.5D			154	283	501	678	678	501	283	154		
7.5D	32	77	178	291	404	452	452	404	291	178	77	77
12.5D	32	44	69	89	97	101	101	97	89	69	44	44
17.5D	32	41	44	44	44	44	44	44	44	44	41	41
22.5D			14			20	20			14		
27.5D												

Arrow Indications (in candelas/m²)

	Red	Yellow (**Stk# 14-03-4020**)	Green (**Stk# 14-23-4025**)
Arrow Indication	5 500	11 000	11 000

LEDs for arrow indications shall be spread evenly across the illuminated portion of the arrow area. Arrow LED signal modules shall be tested in conformance with California Test 3001.

2.3.4 Measured chromaticity coordinates of LED signal modules shall conform to the chromaticity requirements of the following table, for a minimum period of 60 months, over an operating temperature range of -40°C to +74°C. Each LED traffic signal lamp unit shall meet the minimum requirements for light output for the entire range from 80 to 135 volts.

Chromaticity Standards

Red	Y: not greater than 0.308, or less than 0.998x
Yellow	Y: not less than 0.411, nor less than 0.995 – x, nor greater than 0.452
Green	Y: not less than 0.506 – 0.519x, nor less than 0.150 + 1.068x, nor more than 0.730 - x

2.3.5 LED signal modules tested or submitted for testing shall be representative of typical production units. Optical testing shall be performed with LED signal modules mounted in standard traffic signal section without visors or hood attached to the signal sections. LEDs for arrow indications shall be spread evenly across the illuminated portion of the arrow area.

2.3.6 After burn-in, LED signal modules shall be tested for rated initial luminous intensity in conformance with the provisions in "Optical and Light Output Requirements." Before measurement, LED signal modules shall be energized at rated voltage, with 100 percent on-time duty cycle, for a time period of 30 minutes. Test results for this testing shall

record the current, voltage, total harmonic distortion (THD) and power factor (PF) associated with each measurement.

2.3.7 Photometric, luminous intensity and color measurements for yellow LED signal modules shall be taken immediately after the modules are energized. The ambient temperature for these measurements shall be 25°C. Test results for this testing shall record the current, voltage, total harmonic distortion (THD) and power factor (PF) associated with each measurement.

2.4 **Electrical**

2.4.1 Each unit shall incorporate a regulated power supply engineered to electrically protect the LEDs and maintain a safe and reliable operation. The power supply shall provide capacitor filtered DC regulated current to the LEDs per the LED manufacturer specification. Design of the power supply shall be such that the failure of an individual component or any combination of components cannot cause the signal to be illuminated after AC power is removed. Any deviation without prior testing and approval from LADOTD shall be grounds for cancellation of the order. The power supply must be current regulated.

2.4.2 The LED traffic signal lamp unit shall operate on a 60Hz AC line voltage ranging from 80 volts RMS to 135 volts RMS. The circuitry shall prevent flickering over this voltage range. Nominal rated voltage for all measurements shall be 117 volts RMS.

2.4.3 The LED traffic signal lamp unit shall be operationally compatible with TS1, TS2, and 2070 controllers, conflict monitors with plus features, and malfunction management units currently used by the Louisiana Department of Transportation and Development and any other Louisiana government entities. In the case of conflicts between specifications, the latest LADOTD specifications will control.

2.4.4 A circuitry that will shutdown the LED module and power supply when 85% ITE light intensity specifications are not satisfied shall be provided. Prior to award the manufacturer may be required to effectively demonstrate this feature.

2.4.5 Each shipment shall be accompanied with a certified test report from an independent testing lab. Shipment will not be given final acceptance and in line for payment until full compliance with the certificate requirement. Random testing of average production modules will be tested to ensure compliance with specification.

2.4.6 Two, color coded, 36 in long, 600 V, 18 AWG minimum jacketed wires, properly terminated to the LED module to prevent moisture, dust, and other environmental substances from entering the LED module, conforming to the National Electric Code, and rated for service at 105°C, are to be provided for an electrical connection.

2.4.7 Individual LED's shall be wired so that a catastrophic failure of one LED light source will result in the loss of only one LED light source.

2.4.8 The LED signal shall operate with a minimum 0.90 power factor.

2.4.9 Total harmonic distortion (current and voltage) induced into an AC power line by a signal module shall not excess 20 percent.

2.4.10 LED signal modules and associated on-board circuitry shall conform to the requirements in Federal Communications Commission (FCC) Title 47, SubPart B, Section 15 regulations concerning the emission of electronic noise.

2.5 **Environmental Requirements**

2.5.1 The LED traffic signal lamp unit shall be rated for use in the ambient operating temperature range of -40°C to +74°C.

2.5.2 The unit shall be dust and moisture tight to protect all internal LED and electrical components.

2.5.3 The unit shall consist of a housing that is a sealed watertight enclosure that eliminates dirt contamination and allows for safe handling in all weather conditions. Moisture resistance testing shall be performed on LED signal modules in conformance with the requirements in NEMA Standard 250-1991 for Type 4 enclosures. Evidence of internal moisture after testing shall be cause for rejection.

2.6 **Production Testing Requirements**

2.6.1 Each new LED traffic signal lamp unit shall be energized for a minimum of 24 hours at temperature operating of +60°C in order to cause any electronic infant mortality to occur, and to ensure electronic component reliability prior to shipment.

2.6.2 After the burn-in procedure is completed, each LED traffic signal lamp unit shall be tested by the manufacturer for rated initial intensity at rated operating voltage.

3.0 DOCUMENTATION REQUIREMENTS

3.1 Each LED traffic signal lamp unit shall be provided with the following documentation:

A. Complete and accurate installation wiring guide.
B. Contact name, address, and telephone number for the representative, manufacturer, or distributor for warranty repair.

3.2 Bidders shall be required to submit a copy of a test report certified by an independent laboratory (e.g. Intertek Testing Services ETL Semko) that the LED traffic signal lamp model submitted meets I.T.E. Standards for light distribution, chromaticity, and power (consumption, power factor and harmonic distortion) with the bid. The table in Item

2.3.3 of this specification replaces the values in Table 1 of Section 4.1.1 of the I.T.E. VTCSH.

3.3 One schematic diagram shall be provided for each LED model number, along with any necessary installation instructions.

4.0 WARRANTY

4.1 The LED traffic signal lamp unit shall be warranted against any failure due to workmanship, material defects or intensity within the first 60 months of field operation. The LED signal shall meet or exceed minimum luminous intensity values (2.3.3) during the 60 months of field operation.

4.2 The measured chromaticity coordinates of light emitting diode signal modules shall conform to the requirements for chromaticity in Section 8.04 and Figure 1 of the I.T.E. VTCSH over the temperature range of -40°C to +74°C.

4.3 The manufacturer shall provide a written warranty against defects in material and workmanship for LED signal modules for a period of 60 months after installation of LED signal modules. Replacement LED signal modules shall be provided within 5 days after receipt of failed LED signal modules at no cost to the department.

5.0 MEASUREMENT

Measurement shall be made of each LED traffic signal lamp unit as specified in the invitation for bids. A certified test report shall be provided to LADOTD assuring that these LED traffic signal lamps meet LADOTD specification.

6.0 PACKAGE

Each LED module shall be individually packaged, and delivered securely bound on pallets. Each package to be labeled with color of module, manufacturer's name, individual serial number, manufactured date, model, and batch or lot number.